

APRIL/MAY 2023

**GCH22/DCH22 —  
INORGANIC CHEMISTRY -II**

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is semiconductor?
2. Describe the two main types of semiconductors and contrast their conduction mechanism.
3. What is alpha decay?
4. Define half-life period.
5. Define cyclotron.
6. What is a breeder reactor?
7. Why is separation of lanthanides elements difficult?
8. What is the common oxidation state of lanthanides and actinides?





9. Write a two important role of potassium in our body.

10. What is transport proteins?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Write notes on Ferro, anti-ferro and ferrimagnetic properties of solid.

Or

12. (b) Write a note on Solid states lasers.

(a) What are the difference between nuclear fusion and nuclear fission?

Or

13. (b) Give a short note on liquid drop model?

(a) What is stellar energy? Discuss the various steps involved in it?

Or

(b) Explain the principle of isotope dilution analysis.

14. (a) Write the difference between lanthanides and actinides.

Or

(b) What is lanthanide contraction? Write any one consequence of Lanthanides contraction.

15. (a) sketch and explain the function of chlorophyll.

Or

(b) Explain the process of fixation of nitrogen.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the following:

(a) Pervoskite structure

(b) Cadmium iodide structure

(c) nickel arsenide

17. Describe the function of Geiger-Muller counter in detail.

18. What are the essential parts in a nuclear reactor? Explain the function it.

19. Discuss the oxidation state and magnetic properties of magnetic properties of lanthanides and actinides.

20. Describe the biological functions of

(a) Carboxy peptidase.

(b) Carbonic anhydrase.

(c) iron – sulphur proteins